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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,728	02/07/2002	Chester L. Schuler	IMM043E	2651

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EXAMINER

LIU, MING HUN

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,728

Applicant(s)

SCHULER ET AL.

Examiner

Ming-Hun Liu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 19-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 19-23 are rejected under 35 U.S.C. 102(e) as being unpatentable by US Patent 5,103,404 to McIntosh.

In reference to claims 19, 25, 31 and 33, McIntosh teaches manipulating device with force feedback. Motors/actuators are configured to provide modulated force feedback (column 4, lines 37-41). McIntosh's invention also includes a data storage component that stores the torque data to be supplied to control the force feedback (column 10, 46-53). McIntosh also teaches a sensor that is used to determine the position of the moveable device (column 7, 50-57). In column 2, lines 49-54, McIntosh teaches that the "the motion of (the) motor, is determined by either operator controlled movements of the control motor or preprogrammed motion instructions" i.e. a force profile. More specifically, he teaches "the manipulator motor is driven to its desired position as determined by the control motor, or in some cases, preprogrammed instructions" and "that the system provides a readily programmable degree of coupling between the two motors" in column 3, lines 1-30. McIntosh discusses the different mode of force calculations that may be implemented, also described in the flowcharts disclosed

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in figures 18-23. McIntosh's invention also includes RAM and ROM memories (figure 10) to assist in the loading and storing of torque information. Finally, McIntosh also includes a local controller that is connected to the storage device and actuator (figure 10). The local controller communicates with the host computer (column 10, lines 24-25) to determine the correct feedback values to be applied (column 10, 30-45).

In reference to claim 20, McIntosh teaches the use of two motors for performing feedback (column 2, lines 42-43).

In reference to claim 21, McIntosh teaches that the data storage component is capable of storing and recalling information (column 10, lines 5-8).

In reference to claims 22 and 32, in column 4, lines 37-41, McIntosh teaches that the torque values are used to produce the desired tactile feedback force.

In reference to claims 23 and 28, as shown in figure 10, the data storage component is external to the controller.

In reference to claim 27, McIntosh teaches that the moveable member is a portion of an actuator (column 4, lines 37-41).

In reference to claim 30, McIntosh's storage component (figure 10, item 65) receives data from a remote processor (item 26).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 24, 26 and 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over McIntosh.

In reference to claims 24 and 28, as shown in figure 10, the RAM and ROM components are external to the microprocessor (item 61), however one skilled in the art understands that control chips may be constructed to include memory elements. There is no disclosed criticality as to why the memory components must be internal or external to the control controller. It would have been obvious for one skilled in the art to use a controller with an internal storage component in order to reduce the number of parts needed to fabricate the invention.

In reference to claim 26, McIntosh teaches a manipulator, however he never explicitly states that the manipulator must be a knob. It is apparent from the background section of McIntosh's disclosure that force feedback manipulators are used to control several computer-controlled machines. As one skilled in the art understands, a manipulating device commonly used to control machines is a knob. McIntosh purposely leaves the option of selecting the most proper manipulating means for the designer on a case-by-case basis. It would have been obvious to use a knob as the manipulating device in McIntosh's invention because of equal-radial shape that allows for the accurate feel of torque feedback.

Response to Arguments

5. Applicant's arguments filed 9/14/04 have been fully considered but they are not persuasive. McIntosh teaches the use of choosing from different modes of force profiles. The evidence of such is discussed on column 3, lines 1-20. McIntosh teaches different

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modes where the force information reacts differently to different inputs. As stated in the rejection of claims 19, 25 and 31, McIntosh does teach the use of “preprogrammed motion instructions” to determine specific force responses. As mentioned in the rejection of the cited claims, in column 2, lines 49-54, McIntosh teaches that the “the motion of (the) motor, is determined by either operator controlled movements of the control motor or preprogrammed motion instructions” i.e. a force profile. More specifically, he teaches “the manipulator motor is driven to its desired position as determined by the control motor, or in some cases, preprogrammed instructions” and “that the system provides a readily programmable degree of coupling between the two motors” in column 3, lines 1-30. McIntosh discusses the different mode of force calculations that may be implemented, also described in the flowcharts disclosed in figures 18-23. McIntosh’s invention also includes RAM and ROM memories (figure 10) to assist in the loading and storing of torque information. Certainly McIntosh’s invention includes the use of programmable torque relationships.

Conclusion


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ming-Hun Liu


DENNIS-DOON CHOW
PRIMARY EXAMINER